



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,455	01/06/2004	Larry Dancey	3343-23	2360
23117 7590 01/19/2007 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER PHAM, MINH CHAU THI	
			ART UNIT	PAPER NUMBER
			1724	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/751,455	<b>Applicant(s)</b> DANCEY ET AL.	
	<b>Examiner</b> Minh-Chau T. Pham	<b>Art Unit</b> 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 November 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, 8-13, 19-27, 31, 34-37 and 40-44 are again rejected 35 U.S.C. 103(a) as being unpatentable over Eller et al (5,004,483), in view of Kitano et al (5,944,894).

Eller et al disclose a method of controlling relative humidity of inside an enclosed space (10) comprising the step of drawing outside air to the enclosed space to create an air stream discharging into the enclosed space (col. 7, lines 20-21 and line 68 through col. 8, line 2), sensing the relative humidity of the air in at least one sensing location (col. 8, lines 28-38, col. 9, lines 60-67), means for controlling relative humidity and temperature to maintain a desired relative humidity (col. 8, lines 35-37). Eller et al further disclose the step of maintaining the desired relative humidity by raising the temperature (col. 9, lines 6-14). Claims 1-5, 8-13, 19-27, 31, 34-37 and 40-44 differ from the disclosure of Eller et al in that the method comprises the step of raising temperature of the outside air drawn in as required to lower the relative humidity of the air stream. Kitano et al disclose a temperature/humidity controller to control the temperature and humidity of the air passing through (see Abstract, col. 1, lines 55-58) via a controller (140, col. 5, lines 60-62, col. 7, lines 2-3 and lines 11-15), wherein the temperature of air is heated up to the temperature of approximately 23 degrees C (see col. 9, lines 27-29) and the relative humidity is lowered to approximately 40% (see col. 9, lines 37-40). It would have been obvious to a person having ordinary skill in the art at

the time the invention was made to provide a controller of raising the temperature of the outside air drawn in as required to lower the humidity of the air stream as taught by either Kitano et al in the method of controlling relative humidity of an enclosed space of Eller et al since it is an effective means to remove moisture in the hot air stream passing therethrough, hence, providing cooled air with a controlled level of humidity.

Claims 6, 14-16, 28, 29 and 32 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Eller et al (5,004,483), in view of either Kitano et al (5,944,894), and further in view of Vross et al (6,022,389).

Claims 6, 14-16, 28, 29 and 32 call for a filtering unit with multiple filtering layers including an HEPA. Vross et al disclose a filtering unit comprising an HEPA filter (48), a carbon filter (49, and a granular activated carbon filter (51) (col. 5, lines 20-34). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to adopt a plurality of filtering layers including an HEPA filter as taught by Vross et al in the apparatus of Eller et al and Kitano et al since multiple filtering layers would enhance the filtration efficiency in removing all arrays of contaminants from the air stream passing through.

Claims 7, 17, 18, 30, 33, 38 and 39 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Eller et al (5,004,483), in view of Kitano et al (5,944,894), and further in view of LaFerriere et al (2004/0020363 A1).

Claims 7, 17, 18, 30, 33, 38 and 39 call for an UV light to kill microorganisms in the air stream. LaFerriere et al disclose an air cleaner with multiple filtering layers (50, 70, paragraphs 0050 and 0051) with an UV light (60) where the UV light can kill

microorganisms in the air stream passing through. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide an UV light as taught by LaFerriere et al in the filtering apparatus of Eller et al and Kitano et al since the UV light would sterilize the filter medium by killing microorganisms in the air passing through.

### ***Response to Arguments***

Applicant's arguments filed on November 7, 2006 have been fully considered but they are not persuasive.

Applicant's main argument is that neither the secondary reference Kitano et al nor Belding et al discloses the step of "raising a temperature of the outside air drawn in as required to lower the relative humidity of the air stream, such that the relative humidity of the inside air is substantially maintained at a desired relative humidity". The Examiner now drops the Belding et al reference, but still maintains the Kitano et al as the secondary reference to show: Kitano et al disclose a temperature/humidity controller to control the temperature and humidity of the air passing through (see Abstract, col. 1, lines 55-58) via a controller (140, col. 5, lines 60-62, col. 7, lines 2-3 and lines 11-15), wherein the temperature of air is heated up to the temperature of approximately 23 degrees C as "air is introduced into chamber 140a. The heater 142 and the humidifier 144 are set in the chamber 140a. The air in the chamber 140a is heated by the heater up to a temperature of approx. 23 degrees C" (see col. 9, lines 25-30) and the relative humidity is lowered to approximately 40% as "the air with a humidity of approx. 40% goes out of the chamber 140a through an exit 149" (see col. 9, lines 37-

40), as claimed. It is clearly shown that the temperature and the humidity are controlled to the desired level, as claimed. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a controller of raising the temperature of the outside air drawn in as required to lower the humidity of the air stream as taught by either Kitano et al in the method of controlling relative humidity of an enclosed space of Eller et al since it is an effective means to remove moisture in the hot air stream passing therethrough, hence, providing cooled air with a controlled level of humidity.

Applicant's arguments with respect to claims 1-44 have been thoroughly considered but are moot in view of the rejection, as discussed above.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh-Chau T. Pham whose telephone number is (571) 272-1163. The examiner can normally be reached on Mon/Tues/Thur/Fri 7:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Minh-Chau Pham**  
**Patent Examiner**  
**Art Unit : 1724**  
**January 16, 2007**